

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

06/14/01

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APPLICANT: ENTWISTLE, PAUL )

5-29-01

Application No.: 09/848,815 )

Filing Date: 05/04/01 )

For: IMPROVEMENTS TO COMMUNICATE DEVICE )

Art Unit: UNKNOWN )

9

**TRANSMITTAL OF PRIORITY DOCUMENT**

Director For Patents  
Washington, D.C. 20231

Dear Sir:

Enclosed herewith are certified copies of British Patent Application Nos. 0010927.2, 0010929.8, and 0010928.0 for which the above-identified patent application claims priority from.

If, for any reason, these priority documents are not acceptable, please inform the undersigned as soon as possible.

Respectfully Submitted

HEAD, JOHNSON & KACHIGIAN

Date: 06/14/01

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Date of Deposit: June 14, 2001

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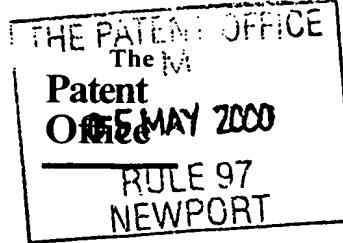
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Dated

21 May 2001

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Act 1977  
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P01/7700 0.00-0010927.2

The Patent Office

Cardiff Road  
Newport  
Gwent NP9 1RH**Request for grant of a patent**

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

1. Your reference

GW-G29643

2. Patent application number  
(The Patent Office will fill in this part)**0010927.2**

- 5 MAY 2000

3. Full name, address and postcode of the or of each applicant (*underline all surnames*)**Pace Micro Technology Plc**Victoria Road  
Saltaire  
Shipley  
BD18 3LFPatents ADP number (*if you know it*)

If the applicant is a corporate body, give the country/state of its incorporation

U.K.

**7588569001**

4. Title of the invention

**Improvements to Communications Device**5. Name of your agent (*if you have one*)**Bailey Walsh & Co.**"Address for service" in the United Kingdom to which all correspondence should be sent  
(including the postcode)**5, York Place  
Leeds  
LS1 2SD**Patents ADP number (*if you know it*)**224001**6. If you are declaring priority from one or more earlier patent applications, give the and the date of filing of the or of each of these earlier applications and (*if you know it*) the or each application number

Country

Priority application number  
(*if you know it*)Date of filing  
(day / month / years)

7. If this application is divided or otherwise derived from an earlier UK application, the earlier application

Number of earlier application

Date of filing  
(day / month / years)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer "Yes" if:

**Yes**

- a) *any applicant named in part 3 is not an inventor, or*
- b) *there is an inventor who is not named as an applicant, or*
- c) *any named applicant is a corporate body*

*See note (d)*

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Description

7

Claim(s)

1

Abstract

Drawing(s)

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10. If you are also filing any of the following, state how many of each item.

Priority Documents

Translations of priority documents

Statement of inventorship and right  
to grant of a patent (Patents Form 7/77)Request for preliminary examination  
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(Patents Form 10/77)Any other documents  
(Please specify)

11.

I/We request the grant of a patent on the basis of this application

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Date

04.05.00

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G Wood  
0113 2433824**Warning**

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## Improvements to Communications Device

The invention which is the subject of this application relates to an improvement in a communications device and, in particular, to a device of a type which includes a memory and capacity to add information or data input to the memory, retain the same and allow for the selective output or transfer of the information or data from the device to a remote location or other device.

In one form of the device there is provided a means for allowing the ability for a user in their premises to compile a list of data such as data relating to products for a shopping list, to subsequently transmit the data via a communication link to a supplier or retailer of the products or goods represented by the data and which supplier or retailer can then subsequently supply the goods to the user of the device. Thus, there is no need for the user to actually attend the premises of the retailer or supplier. Furthermore, the retailer, supplier or any other organisation or individual can download data to the device to allow the production of adverts, or other material which is typically displayed to the user via a display screen on the device. It is also envisaged that in one embodiment the device is compatible with, and used in conjunction with a broadcast data receiver of the type provided with a means to receive data broadcast from a remote location via satellite, cable and/or terrestrial broadcast systems and which receiver is also provided with means to allow the sending and receiving of data via a communications link such as by connection to a telecommunications network.

It is envisaged that this form of device would be used extensively by users due to the time savings, convenience and other benefits, but inevitably there will be periods of time during which the device is not in direct use for the intended purpose and the user. In these periods of time it is envisaged that the device can be retained in a

holder or cradle and, during said time, a power source such as a battery or batteries, which is provided in the device, can be charged via charging means provided in the cradle. However, when the device is provided in the holder, it is envisaged that the same will continue to be usable at least to receive data from a remote location and said data may be processed by the device for display on the display screen so that the user, although not holding the device, may still be able to view advertising material and the like via the display screen of the device even when in the holder.

The aim of the present invention is to provide a means whereby the device can be utilised to display advertising material or other material on the display screen when in use and when in position on a holder and to allow display of the material to be maximised so as to enable the material to be viewed easily by persons in the vicinity of the device but without the need for the persons to actually go to the device display screen to view the same.

In a first aspect of the invention there is provided a device which allows for the input of data, the processing of data, storage of same in the device and selective communication of said data to a remote location either directly via a communications link or via a broadcast data receiver and then via a communications link, said device provided for location in a holder and characterised in that the said device includes a display screen on which material can be displayed for viewing by the user of the device and wherein said device and/or holder include means which allow the material to be displayed on the display screen to be magnified and projected against a further surface for viewing.

In one embodiment, the material to be displayed is displayed both on the display screen of the device and on said further surface in a magnified form.

Typically, the holder will include a magnifying means whereby the data which is provided to generate the material to be displayed on the display screen of the device is passed to the means in the holder, processed and projected onto the further surface. The magnification system may be relatively simple using a lens provided in the holder or may be a more sophisticated device in which the data is processed in a magnified condition and, in any case, the display which is generated on the said further surface, which could be a wall, door or the like is provided in a magnified form, thereby increasing the effectiveness of the said material.

In an alternative embodiment, the device rather than the holder includes the magnification means and the same process is followed except that the material to be displayed is generated within the device and the device is provided with the means for projecting the same onto the said further surface.

Furthermore, in this format, the device in some instances need not be located on the holder and may be used for the magnified projection of the material onto a further surface at any location.

The advantage of the invention is that it allows the material which is to be provided for display on the screen, and which material is envisaged to typically include advertising material which the advertisers would wish to be seen by as many persons as possible, to be displayed in as large a format as possible and to make a visual impact.

In yet another format, the device need not be positioned in the holder to allow the holder to generate the magnified material on the said further surface whereby there is provided a data link which may be wireless, between the device and processing means in the holder

which allows data to be received either directly by the holder from a remote location, or by the device and transferred by the device to the holder whereupon the holder, if activated, can allow for the projection and magnification of the material.

It should also be noted that the ability for the holder to generate the magnified material can be with respect to a holder for the device of the type described in detail on the preamble or may be another form of device, such as for example, a mobile telephone or any other form of device which is provided with display means and by which information received for display on a display screen can also be projected via projection means provided in the device or on the holder and reference hereonin to the device should be taken to incorporate any such form of the same.

Specific embodiments of the invention will now be described with reference to the accompanying drawings, wherein:-

Figure 1 illustrates a device in accordance with one embodiment of the invention;

Figure 2 illustrates the device in Figure 1 in position in a holder in accordance with one embodiment of the invention; and

Figure 3 illustrates the embodiment of Figure 2 in more detail.

Referring firstly to Figure 1, there is illustrated a device according to the invention in one embodiment. The device 2 includes a housing in which is encased a processing means which can include a memory for the storage of data which is input into the device, processing means to allow data which is input to be stored in an appropriate manner, further processing and decoding means which allows data which is received from a remote location in an encoded

format to be decoded and then processed, and a power cell which, typically, is rechargeable and which is provided to allow the device to be used independently of a holder or a mains power supply.

The device is provided to allow the input of data, which can be in a number of formats such as, for example, the device may be provided with a barcode reader, which allows the device to be placed in the vicinity of barcodes on products and, by reading the barcodes, data relating to the product is input into the device and stored. There may also be provided a keypad 4 and "pen" 5 as shown, which allows a user to input data into the device by entering appropriate codes, words or the like, and a display screen 6 is provided for displaying information to the user with respect to the operation of the device and allows the display of further material such as advertisements and the like.

There is typically also provided at least one means of receiving data from a remote location such as, for example, an aerial which will allow for radio broadcasts to be received, or alternatively or in addition, the device is provided to allow connection with the broadcast data receiver, not shown, and which connection can be achieved via a cable connection, or to allow direct connection with an external communications network.

When a broadcast data receiver is provided it is typically used in the premises to allow reception of broadcast data from a remote location and, from said data, which is typically transmitted via any of satellite, cable or terrestrial systems, a range of television programmes can be made available for selection by the user. In addition, the broadcast data receiver typically includes a communications link, typically a telecommunications link, to a telecommunications network and the device, in a preferred

embodiment, is provided to utilise this telecommunications link by connecting and communicating with the broadcast data receiver.

Thus, in "normal" use, it is envisaged that the device can be held in the hand by the user and separated from the holder 10 for the same or mounted in the holder as shown in Figure 1 which may be provided independently or as part of a broadcast data receiver. The user is then able to input the data which is required, such as for example, data indicating those products which they may wish to purchase from a particular retail outlet, and they may do so as they move around a premises with the device, while they are out of premises with the device, and so on. In any case, the data which is input is stored and then can be communicated to a remote location via the communications link to which the device is connected.

When not in use, it is envisaged that the device is held in the holder 10 and as shown in Figure 2 the device can be held in a "closed condition during which time the power cell of the device can be recharged via a connection between a recharging unit provided in the holder and the power cell of the device. Thus, the holder can be provided with a mains power supply to allow the recharging to take place.

In accordance with the embodiment shown in Figures 2 and 3, the holder is further provided with a projection and magnification means whereby data which is held in the device and which would conventionally be used to generate a display on a display screen 6 is instead, or alternatively is also, transferred via a connection between the device and the holder, to processing means provided in the holder to generate a video display 12 from the holder for projection of an image 14 onto a surface 16. The projection means typically comprise a series of lens and typically also a light source and, when operational, the projected image is emitted from the holder and can

be directed onto a further surface, such as a door or wall. Material is then displayed on the door or wall in a significantly magnified form to that in which it is displayed on the display screen 6 of the device and so the user, while they may not actually be using the device while it is in the holder, can view the material which is displayed via the device and holder in the room without actually having to go to the device itself. This allows the provider of the material data, which may for example be advertisers or retail outlets, to have a better opportunity to have users view the material even when the device is not in use. It is envisaged that the projection means will be focused as with conventional projection means so as to suit particular user requirements.

In a further embodiment projection and magnification means are again provided but in this case they are provided in the device itself so that the material which is for display on the display screen 6 can also selectively be projected from the display device onto a further surface at any location rather than just at the location of the holder. Yet further, or alternatively, there may be provided a communications link between the device and the holder or the holder may be provided with means to receive data directly, which means that the holder can be used to generate the material onto a further surface without the need for the device to be provided as part of the holder.

Indeed and in yet a further aspect which is not shown, the holder itself may be provided with a display screen so as to provide a permanent base at which the material can be displayed on the holder screen and a portable device which can be carried by the user.

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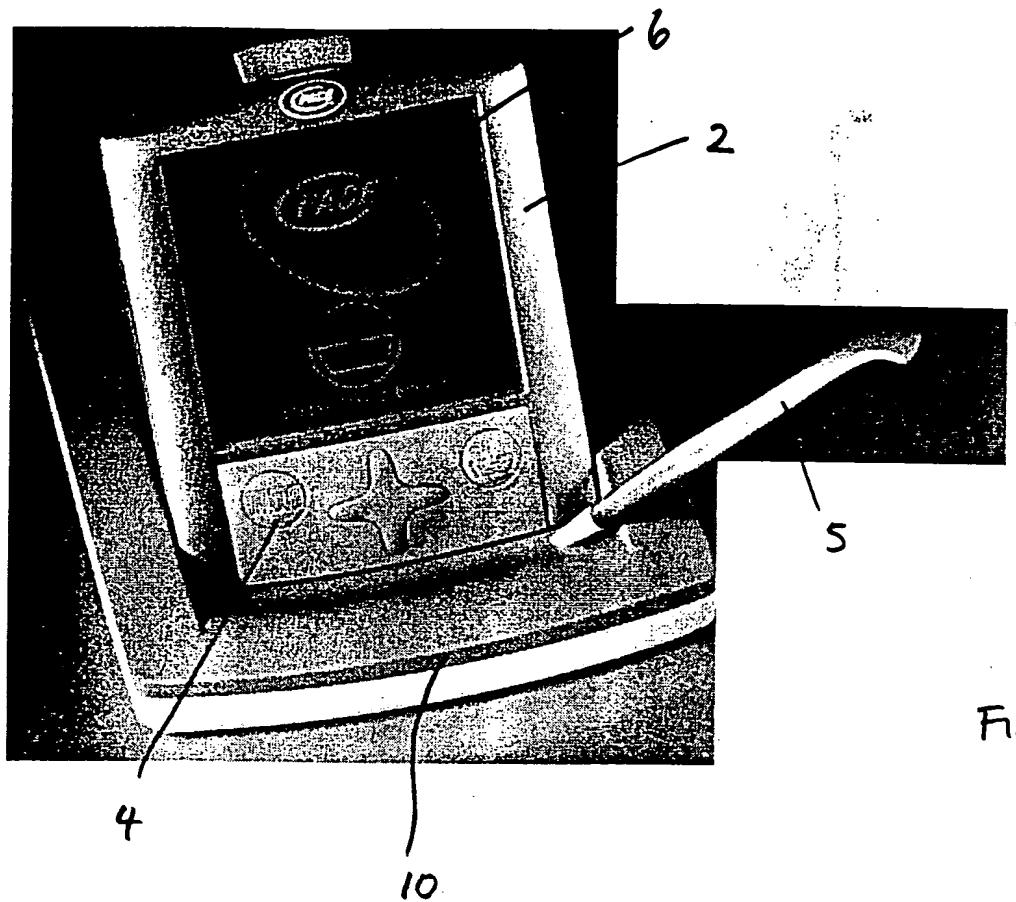


Figure 1

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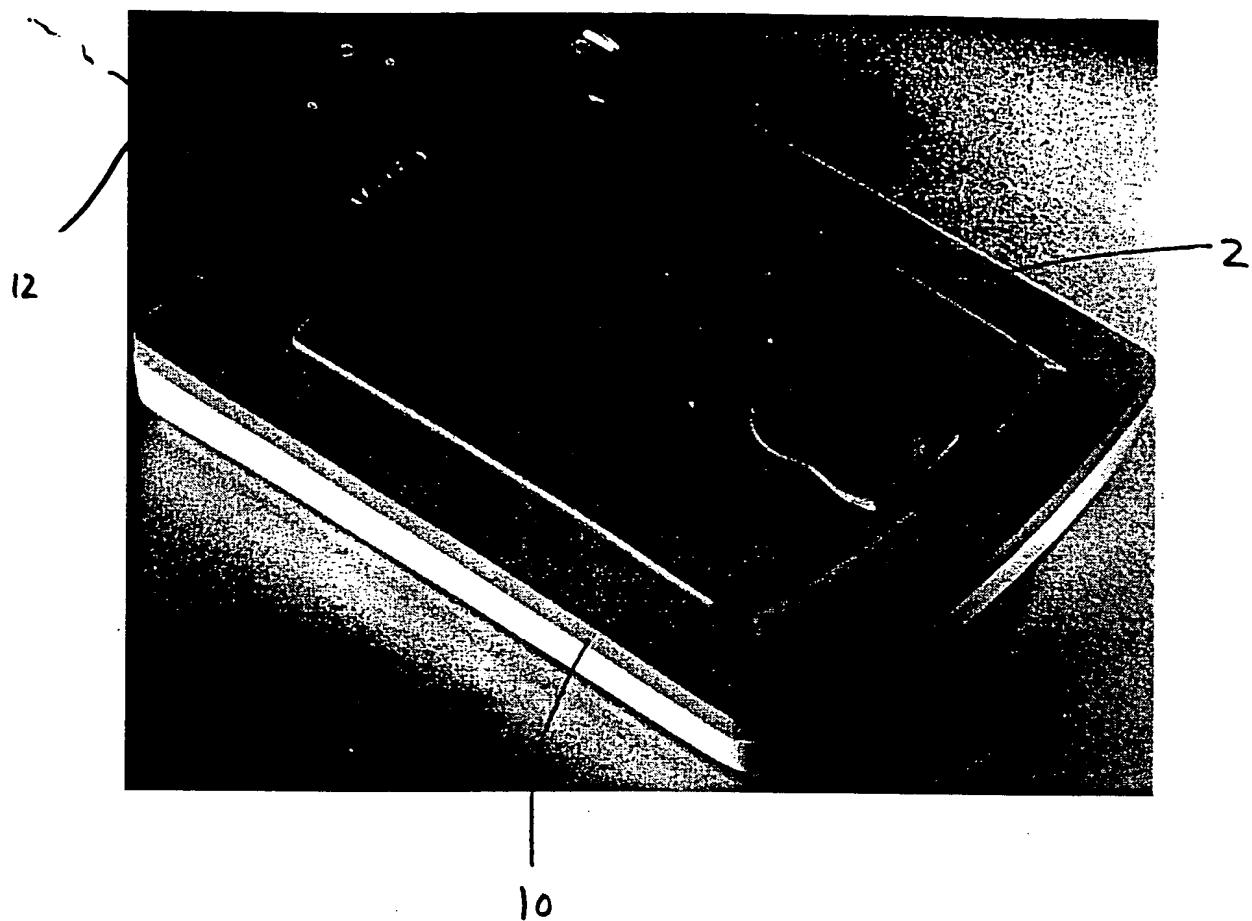


Figure 2

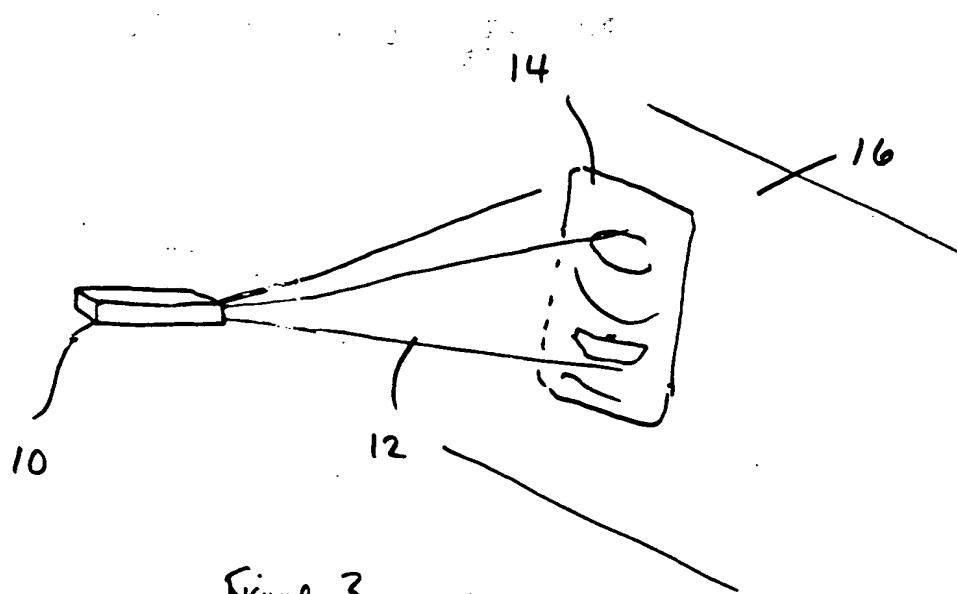


Figure 3

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